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**To:** DES SBCC <sbcc@des.wa.gov>  
**Subject:** State Building Code - comments on proposed changes

#### External Email

Thanks for soliciting input on our state energy code. A few suggestions for energy code modifications:

1. TSPR was created and envisioned as an alternative compliance path to either the prescriptive path or to the performance/energy model approach. Instead, it was overlaid on top of the prescriptive path. This creates confusion and extra design effort. The extra effort isn't captured in the WA State Fee Schedule % numbers or in industry norms for design fees. I recommend utilizing it as a third compliance path and removing the overlap with the prescriptive approach.
2. Healthcare and other specialty facilities have requirements that make it especially difficult to completely eliminate natural gas or fuel oil for items such as steam boilers to serve sterilization and process loads, and for emergency generators. I recommend working with The American Hospital Association's sustainability team to make sure we don't enact laws that conflict with other requirements, such as ASHRAE Standard 170, or have other negative unintended consequences. Kara Brooks ([kbrooks@aha.org](mailto:kbrooks@aha.org)) is an excellent contact who is willing to help with this type of effort.
3. I recommend revising the state energy code so that it adopts and references ASHRAE Standard 90.1 and includes the latest addenda, rather than continuing to try and write and update a specific WA State Energy Code with a large and ever growing number of tweaks and modifications from ASHRAE-90.1. ASHRAE keeps 90.1 under continuous maintenance with a great team of committee members; fixing errors, responding to new technologies, and appropriately evaluating and responding to opportunities for increasing efficiency. I was a member of the ASHRAE Board of Directors in 2007 when we voted to greatly increase the target efficiency numbers from the standard going forward. The standard is aggressive and continues to push the envelope in a progressive manner. Engineers are familiar with 90.1, as it is the energy code in almost every state. We find it an additional challenge and burden to try and track a separate Washington State Energy Code with its specialty requirements and custom reporting methods. The TSPR software is not great, sorry. We've had multiple trainings and spent a lot of effort trying to educate everyone on how to use it. We can't use ComCheck to show compliance, which we can use in many other states to readily demonstrate that we meet 90.1 and the work to set up ComCheck for 90.1 is already there for easy adoption. All of the special forms and software and separate training time really take away from our engineer's ability to focus just on doing good sustainable design per ASHRAE 90.1. It is hard to get any extra design fee for the extra work that the WA State Energy Code keeps adding to the plate of the engineer. We used to attend a class to get up to speed on energy code updates every three years. Now we have hours of training and still have to have more internal session because people have so many questions. The online training is ok, but they have to talk really fast to cover it all and there isn't time anymore to ask many clarifying questions. Project schedules are not long and they continue to shorten. Design timeframes are so brief. Building Owners would benefit from using ASHRAE 90.1 that everyone is familiar with. We can do a better job of advising a client early on during design whether or not a suggested concept will be compliant because we're very familiar with what it takes to meet 90.1— without the risk of getting further

along in the project and finding out that something will work for the WA Energy Code prescriptive path, but not TSPR, for example. It doesn't help anyone to find out later in design that there's a problem with compliance.

4. I am concerned that the energy code is really limiting the options for system selection and equipment. In some cases, the heat pump option doesn't work well. It is colder on the east side of the state and equipment like a heat pump chiller gets derated around 30 degrees F (depending on manufacturer) and won't even operate at zero F for winter Spokane design conditions. Going with an electric boiler to meet the demand when a heat pump chiller can't meet the load sometimes works, but what if the facility wants to have a back up generator? We are dealing with that now on a project. Not being able to use natural gas for the boiler means that the emergency generator could end up needing to be double the size, which is a huge cost and space impact beyond the fact that the natural gas boiler would be less costly to install and operate as well. For this project, the generator would not fit on the site available and has negative impacts to the size of electrical service they are trying to bring to the building. Generators that size currently have a 46 week lead time. For some projects, an air source heat pump for space heating is fine with electric coils as back up, but that doesn't always work well and geothermal is great, but some sites can't accommodate that option (and budgets don't always have enough capacity for geothermal). We make recommendations to clients to push efficiency as much as possible, but we need some flexibility to be creative and in some cases to be practical.
5. I am concerned that we are going to move to all electric and have some regrets at not having multiple fuel source options for buildings for resiliency. It is nice to have a gas fired AHU and then use electric reheat coils on a high efficiency VAV system. If the power goes out, the fan can be on a generator and heat comes from natural gas. If the gas burner fails or gas service is out, then the building still has the electric reheat coils to provide freeze protection and some amount of comfort conditioning. If we go all electric everywhere and the grid has a problem, where are we? We are in trouble and feeling regret. People head to hospitals and community centers in times of crisis so some allowance for alternate fuel sources and resilient design is important to maintain.
6. I am in favor of SB 5722 in that it moves the Tier 2 spaces into required compliance. I have not had time to review the benchmark levels proposed to avoid the fines so can't speak to that portion.

Thanks for the opportunity to comment.

Feel free to contact me with any questions. These are my personal opinions as a practicing consulting engineer in Spokane, WA since 1996.

Traci

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